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extend to you whatsoever facilities the institute may have for your work. We feel the greatest interest in the work which the association is doing and in the effort that is making on your part to bring together those who are engaged in the higher work of education and those who are engaged in its beginnings, and we hope that whatever may be found here which will facilitate in any way your work will be freely used by you. I do not know how often you may have visited the institution, or whether you desire to visit it now, but I will say that any who may wish to visit the laboratories, or to see the other buildings of the institute, will be furnished on application at the secretary's office with a guide; and if you desire to see experiments of any particular sort, or to see tests in the testing laboratories, if you will signify to the secretary what sort of experiments you would like to have made, they will be prepared at your pleasure. I wish only to express, on the part of the Institute of Technology, the corporation, and the faculty, the fact that during the time of your stay here we hope that you will understand that the institute belongs to you (applause).

THE PRESIDENT: The secretary has an announcement to make to the association.

THE SECRETARY: I have a note from the secretary of the Technology Club extending to the members of the association, in behalf of the Technology Club, all the privileges of this club.

THE PRESIDENT: I am sure that the association will rejoice with me that at this meeting we are to listen to two new presidents of New England colleges. We welcome this afternoon President Faunce, of Brown; this evening we shall welcome President Hadley, of Yale. Both these gentlemen are to deal with themes of present interest and importance; with themes which have vivid practical applications at the present moment. I have the honor to introduce to you President Faunce.

THE TEACHER'S OPPORTUNITY OF DISCOVERING INDIVIDUAL CAPACITIES IN HIS PUPILS AND SO DIRECTING THEM TO APPROPRIATE CAREERS

PRESIDENT WILLIAM H. P. FAUNCE,
Brown University

This subject is not of my choosing. It was given me by another. Its very phraseology is significant of the vast change

in educational standpoint that has come about in twenty-five years. "The teacher's opportunity to *discover* and *direct*." The function of the old-time pedagogue was so different that he must use another vocabulary. His business was to "inculcate," or stamp in with the heel; to "discipline," in the sense of punish; to "instruct," or pile up; to "educate," or draw out, often in the method of forceps rather than of sunshine. All these words and their associates involved the same venerable conception, that the pupil's mind was a passive somewhat, an inert mass of faculties, to be stamped or punished or piled up or pulled out into the shape desired by the schoolmaster.

All this was done systematically and thoroughly by the old education of which most of us are the products and victims. We can hardly think of the process without a strange mixture of gratitude and resentment. The stamping in and drawing out might be by birchen-rod, by forfeits, by rewards of merit, by the marking system; the inculcation might be by fear or shame or by anti-social competition; the discipline might be by the ingenious tortures of *Colburn's Mental Arithmetic*, or by memorizing long lists of dates called history; but the entire process was consistent with its fundamental assumption, that the pupil's mind is what the Greeks called *hule*, a formless, lifeless mass on which the teacher is to work, and out of which he is to produce the human being of desired pattern. The places where this process, as applied to girls, reached its most complete realization were called "finishing schools"—the most pathetic phrase in the history of education. Curiously enough, the old education, which thus treated the mind as purely passive material (a "sheet of white paper," in Locke's phrase) was ever insisting on the immaterial and spiritual nature of man's soul; while the new education, which treats the mind as essentially a living, spontaneous energy, uses a physiological nomenclature, and is constantly accused of materialism. But the real materialism is not that which uses a certain set of terms, but that which consistently treats the pupil as clay in the hands of the potter. In this sense our psychology lies at the base of all our education; not that the data derived from the laboratory can be

used in the class room, but that the way we think of the child determines all we do for the child. Think of the child as white paper, or clay, or wax, or wood to be graven by art and man's device, and we are materialists in education, talk we never so wisely about the immortal soul. Think of the child as a living, unfolding organism, a life to be developed, an energy whose potencies are to be discovered and directed—then no physiological nomenclature can hide the essentially spiritual nature of the educational process.

Here, then, is our fundamental conception: the pupil with whom we are to deal is a living, growing organism, and our first task is to become acquainted with him. The joy of discovery in nature is as nothing compared with the fascination of discovering the gleam of latent capacity in human nature. When studying the child, we may say in the deepest sense: "I think thy thoughts after thee, O God." Here in the child we have not a pillar to be carved by chisel and hammer, but a plant needing sunshine and air and nourishment, a plant to be discovered before it is directed, a plant that can be trained but was already pulsating with the powers of earth and sky before we touched it. The biological conception has displaced the mechanical. The pupil is much more mysterious than we dreamed; the educator's task far more difficult than we knew. But at the same time the task is far more attractive, and is even fascinating, since we are more immediately in the presence of the infinite than we thought, and we learn more than we teach. No man can teach children who is not constantly taught by them. We are continually amazed at the spontaneous overflow, at the restless activity, the ceaseless play of energy on the part of the pupil, and we find that all teaching begins in wonder. And this wonder soon passes into a sense of peculiar responsibility, as we realize that the mark we make upon a living organism is retained and built into the organism forever, while the mark we make on mere material may be changed or effaced. The dent made in iron or steel can be removed; the scar of solid shot on armor plate can be beaten out; but the mark of the tempest or sunshine on the tree is preserved in the innermost fiber, enlarged and intensified by the

lapse of time. The "hand that rounded Peter's dome" had slight responsibility compared with the hand that rounded Peter himself, or that left him forever unrounded and unbalanced; and to "groin the aisles of ancient Rome" is an easy task compared with the forming of the spirit of a generation of students. Hence, the teacher may go forth each morning steadied by responsibility and fascinated by his task.

How, then, can the teacher discover the powers in this living personality of the pupil?

1. First of all by varying the means of approach to the pupil's nature. This is the cause of the resentment which some of us feel in regard to our own education, because while we were approached insistently, we were approached in only one way. We were attacked through the alphabet and the multiplication table, later through words and names and dates, and if we did not respond to these time-honored stimuli, we were pronounced hopelessly stupid. Recently in Chicago I went into a practice school connected with the University of Chicago. I saw the children gathered round a teacher who was reading to them the poem of Hiawatha, and their eyes were wide with wonder. Then they went over into the Field Columbian Museum, and saw the materials of Indian life, the tents and the wampum, the feathers and the moccasins, and all the utensils of the Indian household. Then they returned and modeled in clay an Indian village, with Hiawatha at one end of it, and all over it the marks of the creative imagination.

I, too, learned Hiawatha, side by side with Mr. Colburn's ingenuities. I could spell the name of every tree in Hiawatha's forest, but would not have known one of them if I had seen it. I could pronounce the name of every beast on the American continent or in Noah's ark, but knew nothing about any one of them. I confess I enjoyed this verbal proficiency; but all around me were scholars who hated it, and hated the school that imposed it, and so were pronounced incurably stupid, although in after life they showed great constructive power. I might be taken as an average sample of the school product in the best schools of New England thirty years ago; and I am compelled

to say that for the first eighteen years of my life, not a teacher ever showed me a plant, or a tree, or a star, or a flower, or a fossil, or a living creature. The ideal of those best schools, under the shadow of Bunker Hill, was to sit up straight with folded arms, and affirm at the close of a day of word-study that we had not communicated once with any fellow-student! The triumph of the teacher was in "keeping order" among the scholars. She did not know that the growth of a plant is always disorderly from the standpoint of a crystal. She was living in the pre-biologic era, and we blame, not her, but her generation. Every possible means of approach to the child's mind may surely be tried. The city of Mansoul has more entrances than simply the eye-gate. Through eye and ear and touch and taste and smell, through blackboard and gift and game, through objects and through pictures and through models, through listening and through doing, through books and tools and friends, through isolated toil and coöperative action—through any way that finds the pupil and reveals him to himself and to his world—must we approach the citadel of the person.

The same thing, of course, is true in secondary education. Which of us has not seen a boy, who could not master grammatical forms and seemed hopelessly stolid, awakened to reality and interest by the use of a lathe and a plane? To make wooden boxes is not to be educated: but if through the making of boxes there can come power of concentration, discrimination, accuracy, love of truth, courage to surmount difficulty, persistence in effort and joy in achievement, then at least we may try this method on those whom we could not reach by conjugations or problems in percentage. If we have persistent faith in humanity—and without it teaching is drudgery—we shall know that there is somewhere a key to every soul, and we shall realize that the soul is trying to find its way out far more eagerly than we are trying to find the way in. Or, as Browning has put it:

To know
Rather consists in the opening out a way
Whence the imprisoned splendor may escape,
Than in effecting entry for a light
Supposed to be without.

This is the truth that Booker T. Washington is ever impressing on us; happily at last with visible results, with regard to the education of the negro race. Industrial education for the negro does not mean that we are going to give him an education of inferior kind. It means that we are going to give him something better than we have yet given to the white man, that we are to address not only his memory but his whole personality and give him opportunity to express himself not only in essay and sermon, but in all the myriad ways which the various aptitudes of his nature require.

The severest criticism that can be made on American colleges is that in spite of their noble history and lasting achievements, they have in the majority of cases failed to discover men. The college faculty have been constantly amazed at the postgraduate achievements of men in whom the faculty saw no sign of promise. "How could that man so develop after he left us?" they cry. Simply because actual life brought a set of stimuli which the college, with its one kind of approach, failed to supply. The college which has only one fixed curriculum is really a technical school, demanding high technical skill in a certain set of studies. Those studies may be the best in the world for educational purposes, but if they are few and fixed they are really making specialists, they are selecting and training the men susceptible to a particular kind of stimulus, and neglecting the others. But it ought not to be possible for a man to go through four years without being stirred and aroused at the center of his soul. If the college does not do it, it is because the college is only a segment of life, and its curriculum contains only a few notes in the gamut of reality. Why should not the college appeal to the love of beauty as well as to love of truth? But the Puritan college ignored the fine arts. Why should it not appeal to the executive faculty, to the power of action as well as the power of thought, to the will as well as to the logical faculty? Amiel's journal discloses a soul exquisitely cultivated on the side of literary art, but utterly unable to make decisions, to execute its purposes, or to grapple with life. This is mis-education. Why should not all schools, from kindergarten to university, appeal to

the constructive power—to the power to build and carve and plant, as well as to the power to think and talk about building, carving, and planting? If the feelings are the basis of the higher mental powers, as psychology is now asserting, what can we say of an education which ignores the emotional side of nature, except that it is narrow specialism? If some minds are awakened by contact with concrete objects, and not by the “verbal packing-case” in which the object is usually kept, what shall we say of the course of study which never introduces objects, except that it is technical instead of liberal? Professor John M. Coulter tells us that when Rafinesque, the first teacher who used the laboratory method west of the Alleghanies, ventured to bring plants into a recitation in botany, his procedure was strongly objected to by the rest of the faculty, as “tending to produce disorder among the students, and to convert a serious recitation into the mere examination of curiosities, thus wasting much valuable time.” Yet this spirit, essentially provincial and sectarian, was supposed to represent liberal culture.

But it is time for us to insert two *caveats*. First, we must not suppose that new methods of reaching the hidden capacity will enable us to do without the old methods. We are in constant danger of substituting for certain studies others which are by no means equivalent, studies which may make brilliant promise, but whose power is yet untested. One reason why Greek is a better means of developing intellect than botany is not that the humanities are better than the sciences, but that modern botany is forty years old, and Greek as an educator is four hundred years old. We know just what two years of Greek will do for a student reasonably responsive to that training. The method of teaching is defined, the authors read are usually the same, the drill in forms is established. But two years of botany depend almost entirely on the personal equation of the teacher and the laboratory facilities of the school, and no man can say how much development is implied. After four hundred years of science, we shall be able to speak more adequately on “what knowledge is of most worth.” And no lapse of time will ever enable us to do without the

studies which have educated the leaders of the last four centuries of history.

The other caution is this: No training is education which does not provide for honest struggle with difficulty on the part of the student. Life has many disagreeable tasks, and one great blessing conferred by the old education was the ability to do the irksome, the difficult, and even the repulsive, without whining or rebellion. When I recently said to a kindergartner, "What provision is there in your method for teaching the children to do the disagreeable tasks of after-life?" she answered: "None; there are no disagreeable tasks in life, to one who views it rightly." This transcendentalism is lofty indeed. But most of us thank our teachers that we learned in the days of narrow outlook and wearisome drill at least to possess courage in the face of obstacles, and patience under monotony, and resolution to rise after falling, and that something of the granite of the New England hills was in the training of the old New England teacher. We need not invent difficulties for pupils. But we need not hide their existence. Unless our pupils learn to "endure hardness as a good soldier," they are not prepared for real life. In pleading for variety of approach to the pupil, we are not praising the dictum of Rousseau that "duty and obligation should never be mentioned to a child," and we are not endorsing the soft pedagogics of our time, or the "flower-pot" education, which would shelter the child from the sterner facts of life. When we find Robert Louis Stevenson writing from his bed in Samoa: "To me the medicine-bottles on my chimney and the blood on my handkerchief are accidents; they do not color my view of life," we are reading the record of a soul that had been educated by more than games and toys, and had triumphed over care, and fear, and pain.

We shall never discover in our schools those pupils who are destined to be reformers, patriots, statesmen, leaders in moral enterprise, unless we sound the eternal note of duty, face unflinchingly the ethical facts of the universe, and in appealing to "interest" remember that the profoundest of all human interests is the interest in the triumph of righteousness in all the earth.

After all, it depends not so much on the method as on the teacher whether the pupil is really discovered and directed. A strong vitality in the teacher is the most powerful means of evoking vitality in the pupil. To be interested is always to be interesting. Some of the best teachers are not conscious of any method. They have always done by intuition what the books at last would teach us to do on principle. They are so thoroughly tingling with life, intellectual and moral, themselves that they impart life by contact. When a teacher has reached his dead-line, no pedagogy will help him. When the world is to him stale, flat, and unprofitable, he can never make it interesting to any students. But when he is throbbing with a passion for language, or science, or art, or history, or humanity, his passion is contagious, and virtue goes out of him unbidden. A strong intellectual life in the teacher is the most powerful known stimulus in the intellectual life of the pupil.

One other qualification of the teacher we must not forget—sympathy with the individual. Young minds turn toward intelligent sympathy as plants toward the light. In such an atmosphere they unfold and expand surprisingly. Ambitions repressed for years by criticism or rebuke suddenly come to the surface in the presence of a sympathetic teacher who is thinking not only of the class but of the individuals who make the class. Here is the greatest danger of our expanding colleges and universities. The individual is lost in the crowd, and the teacher is at a distance from the pupil. All libraries and laboratories are poor substitutes for the touch of soul on soul. Unless we can get it back again as once we had it, we shall be the victims of our own educational appliances. Tutors and instructors are well enough, but the great mature vital personality is the source of true education. This personal contact of teacher and pupil is the best thing a school can give. Socrates knew it, and, by his contact with a few, he lifted the world. The prophet from Nazareth knew it, and contented himself with personally training twelve men. We cannot select men and say, "You were born for this, and you for that," but we can so stir them with vision of their own possibility and opportunity in the world that every

aptitude divinely implanted shall find expression and growth, and our pupils shall succeed us in the endless progress of the world.

DISCUSSION

(Vice President Edward G. Coy, of the Hotchkiss School, presiding.)

THE VICE PRESIDENT: Ladies and gentlemen—The discussion of this paper will be opened by Mr. Augustine Jones, principal of the Friends' School of Providence.

MR. AUGUSTINE JONES: Fellow teachers—I find myself in a very peculiar place. I might have known that I should, before I started, but it is not the first time that persons have gone into things and afterwards have found that they were unfortunate. The only thing that I can fall back upon is an experience of many years in connection with boys and girls in the matter of education, and also my life as a pupil. It is a very difficult position to stand up here before men and women who have large experience and undertake to make suggestions to them which are utterly commonplace. Nevertheless I think, being called upon under these circumstances, it is a man's duty to testify to what he has seen and what he has felt, and to do whatever he can in aid of progress.

I am satisfied that in a way the teacher has greater opportunity than the parent. To be sure, there is a sense in which the parent has the advantage. I believe it was Voltaire who said, "Give me the first nine years of the child and Christians may have the rest." There is a certain power of bending the twig with them, which never comes to anybody later, but everybody knows that as we go on in life we crystallize. The exact time when a child comes to school is one when qualities are crystallizing and becoming more permanent and settled in character, and therefore then comes the greatest opportunity to do a lasting and permanent work. My life has been associated mostly with teaching in boarding-schools, where I have been with my pupils all the twenty-four hours, and have therefore had a work to do which is somewhat more extensive in the building of character, as I think, than some other classes of schools. There is no doubt that the most important thing is first to get at the heart and mind of a child, and to make that child feel the value of learning, and next to feel that he has possibilities of acquiring that learning to himself. You know that there is a

fellowship, or community in labor, and an interest or sympathy in it which nothing else is like. If you are working with a person night and day in one direction, you have a power over him greater in other directions than you can conceive.

I used to be greatly troubled with getting men to preach, for we have religious exercises and services not common to the public school. Now, the teachers who instruct in other things do much of it with power. We have all kinds of people, Catholics and Hebrews and others, and we have to meet everybody, and we have to stand back on the broad platitudes of the preaching at Jacob's well, and recognize essentially that "God is a spirit and they that worship him must worship him in spirit and in truth," or the keynote of what Mr. Whittier used to call the church universal. That is the thought which has to run through it. I perhaps am wrong and behind the age, but I believe that that sort of teaching is fundamental to moral life, that we must get some religious feeling into the hearts of children, without the narrowness and bigotry of sectarianism, something of that spirit must inspire them if we are going to control the moral life really and earnestly, and build them on eternal foundations. I only speak of that as one way of influencing. This is open to objection. The public school cannot meet this; in a way they are not able to do it. Nobody holds them responsible for it to this extent. But when parents come to us I say to everyone, "We will be faithful. We have no clan-nish spirit, no selfish religious purpose, but we are working on broad liberal grounds, and we will meet you fairly and sincerely. We do recognize that the first religious thought in early years, planted by the mother and father, is primal and fundamental, and that whoever shakes that takes the risk of creating infidelity or disturbing religious force and progress." That is the way we build in ethics, and I think that we get a strength, a foundation for moral work, which we could not secure otherwise. As President Faunce has told us here, I am more and more convinced, as I grow older, that we must regard these moral foundations, that in our own country, to pass off a little from the main thought, the peril which lies about us is lack of moral work. We feel it in the statesmen, we feel it in the legislative halls, and we find it everywhere in business; but public education must somehow, I think, reach this fundamental subject more thoroughly than it has. The weight is laid upon me more and more every year myself, and I stand up here to testify what I feel and what I experience rather than what I have thought in theory.

Now as to the general matter. I am glad the secretary told me I should have but ten minutes. I thought when Dr. Faunce was speaking that I only wanted three, but I shall say a few words more. As I have been looking the matter over, I always get the best information in the trying business of teaching, the best thoughts, by studying the thing as I have found it as a child in my own progress. If I want experience I go right back into what I have gone through, and I can almost always find something to help me out. In this influencing of boys and girls I have been greatly impressed with the power which we have over them. It has been given to us in a remarkable way, and I think every teacher feels that. But this matter of personal contact, this matter of personal association, this matter of personal confidence, is fundamental in it. The boy who has confidence in your learning, or the girl who has confidence in your integrity, faithfulness, and honor and all that, when you undertake to give them advice, as I said when I began, you have an immense power. I don't know how many hundreds of young men and women I have had come to me to talk about their future and their career, and how thoroughly I have tried to have those people gauged up or measured in character and attribute in my own mind. I have letters, correspondence, every week of every year upon these subjects, and I have to give advice and thought to them. I am glad to say that by living near and close to these people I have a power of telling them what I think and I hope sometimes giving them good direction.

I remember a young man whose father came to me many years ago, and he said, "My son is utterly worthless. I can't do anything with him. He won't work. He won't study. He won't do anything. He is bound to be idle and I can't help it." I said, "Send him to me." The boy came. He was nineteen years old. It was rather late, but I took him into my room and I said, "Look here, you know I think a great deal of you,"—and I meant what I said. "I think you have splendid ability. I think you can do almost anything you have a mind to do. I think you have the best opportunity to give a surprise to the community that you live in of any man in this world." He looked at me. I said, "You have reached pretty near the bottom. Your chances are growing less every day. There is only one thing for you to do, and that is to right about face and do your duty and be a man." We both sat silent. We had a sort of a quaker meeting. I said, "I want you to go into that Latin grammar class and lead it, and do your work, and I want to be the man to

proclaim what you have done when you have done it. I want to stand by you, and we will see if you and I together cannot accomplish it. I want you to lead it." He did lead it. He came out all right. When he was ready for college I said, "You are going to college now. I have not said much to you, but I am proud of you, and everybody else is getting so. When you enter that class in college do you lead it! Cut every bridge behind you and lead that class." Perhaps the doctor would not quite agree with me in this, but I meant what I said to him. And he did it. It won't do to go much farther; you know the man. One day Mr. Whittier wrote to me and he said, "They want a man so and so." I said, "There he is." They took him. He is one of the best paid teachers in this country and his name is known on both sides of the water, and I am afraid you will find out who he is. I did not make him, but, oh, I was in earnest with that fellow.

A mother came. I have been trying to think of a few of these instances. A mother came, and she threw her boy into the front door and said, "Take him, I have got done with him." I said, "John, come in here. If nobody else in the world cares for you I do. I am going to do something for you. Now stand up and you and I together will do this business." Today they are as proud of that man as they can be. He is a splendid business fellow. He is doing his duty.

Friend, these are not marvels; they are things that are in every teacher's experience. They only help illustrate what we are at.

Now just one thing more. I think there is danger with all of us who are teachers, of having too limited ideas. I think if we are going to guide people we ought to know a great deal. We ought to climb the mountain and take in the entire landscape. It is not only necessary to be splendid drill masters, splendid disciplinarians, and all these things, which are important, tremendously important, but we must be men of the world. We ought to know what law is, and what physic is, and what all the business of the world requires of men. To be sure, in my place I have not that same duty, perhaps, that a college president has, and yet in one way I have, because many students leave our door and have no more schooling. We send many into the colleges, but many leave at that point and go into the world, and they want the teacher as an everlasting friend, as a guide and assistant. Oh, I think that the magnificence of Dr. Arnold, and Dr. Edward Thwing, and all these men was in the closeness of life and love with which they associated and tied themselves to these men and made them. You say there is a great residuum of the school that must be moved in platoons and

regiments, that you cannot handle them as individuals. That is why schools, and the president has said colleges, ought not to be too large. There is a vast amount of labor that you can do in this way of individual influence. If, as a matter of fact, you cannot reach every one, you must reach the leaders, as Governor John A. Andrew said in his valedictory address about the South. He said, "It is of no use to talk about the average people in the South; we have got to communicate with the leaders, the natural leaders. They led her into the war; they only can lead her out." The leaders will always appear in school. They will always have their influence. You guide, as Dr. Arnold said in his school, by the old sixth form. Those persons, if they are inspired by you, if you have hypnotized them thoroughly, so to speak, with your spirit and your life, your influence will work through them and leaven the lump. It is a great thing to have the leaders right and to have them direct the school.

Ours is a noble profession. I am proud to have had an humble part in it; and I am also proud, ladies and gentlemen, to have been called before you to address you (applause).

EVENING SESSION

The association met at 7:30 P. M., President Eliot in the chair.

THE PRESIDENT: Ladies and gentlemen—We are to have the pleasure this evening of listening to the president of Yale University on a subject in which everyone of us has a keen and permanent interest. I present to you President Hadley.

CONFLICTING VIEWS REGARDING ENTRANCE EXAMINATIONS

PRESIDENT ARTHUR T. HADLEY,
Yale University.

My best apology for contributing one more to the already over-numerous utterances on this theme is that what I have to say this evening is in some measure aside from most of the special aspects of its discussion, which have formed the field for so many educational battles. It does not touch upon the problem of extending or contracting the requirements for admission. It does not solve the question of separate examinations or common examining boards. It does not bear, except by indirection,